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A CASE OF RUPTURE OF THE LUNG, UNASSOCIATED WITH FRACTURE OF THE RIBS, WITH EARLY SUBSEQUENT RECOVERY.

Emergency Hospital, Washington, D. C.

SERVICE OF JAS. KERR, M.D., M.CH.,
ATTENDING SURGEON.

Reported by W. L. PYLE, A.M., M.D., Resident Physician.

THE mechanism of this rare and fatal form of injury has been very aptly described by M. Gosselin. It is due to a sudden pressure exerted on the thoracic wall at the moment of full inspiration, there being a spasm of the glottis or obstruction of the larynx; in consequence of which the lung bursts. An extravasation of air occurs, resulting in the development of emphysema, pneumothorax, etc. Subsequently pleurisy, pneumonia, or even pus in the pleural cavity often results. Hemoptysis is a possible, but not a marked symptom. The mechanism is identical with that of the bursting of an inflated paper bag when struck by the hand.

M. Gosselin reports two cases terminating in recovery. Dr. John Ashhurst, Jr., reports having seen three cases, all of which terminated fatally before the fifth day; he has collected the histories of thirty-nine cases, of which twelve recovered. Dr. Otis has collected reports of twenty-five cases of this form of injury from military practice exclusively. These were generally caused by a blow on the chest, by a piece of shell, or other like missile. Among the twenty-five cases there were eleven recoveries. As Dr. Ashhurst very justly remarks, this injury appears more fatal in civil than in military life.



That so severe a form of injury should show such a rapid and continuous recovery as in the case here cited is without a doubt extraordinary, and would seem to make it worthy of report.

Lewis W., ten years old, white, born in Maryland, and living now in the District of Columbia; was brought in by the Emergency Hospital ambulance on the afternoon of November the 10th, with a history of having been run over by a hose-cart of the District Fire Department. The boy was in a state of extreme shock, having a weak, almost imperceptible pulse; his respirations were shallow and rapid, and his temperature subnormal. There were no signs of external injury about his thoracic cavity, and no fracture of the ribs could be detected, although carefully searched for; there was marked emphysema; the neck and side of the face were enormously swollen with the extravasated air; the tissues of the left arm were greatly infiltrated with air, which enabled us to elicit the familiar crepitus of such infiltration when an attempt at the determination of the radial pulse was made. Consciousness was never lost. There were several injuries to the face and scalp; and there was hemorrhage from the nose and mouth, which was attributed to the fact that the patient had fallen on his face, striking both nose and lip. This was confirmed subsequently by the absence of any evidences of hemoptysis during the whole period of convalescence. The saliva was not even blood-streaked; therefore it can be said with verity that there was no hemoptysis.

The first indication in this, and in all similar chest-injuries, is to limit the amount of thoracic expansion. To effect this, the chest was securely strapped with overlapping bands of adhesive plaster, extending nearly around its whole circumference, and a muslin binder was applied. Hypodermatic injections of strychnin and whiskey were resorted to, and hot-water bottles applied, the patient being wrapped in blankets. It was soon found that the respirations were easier, and the pain less marked

when the patient was propped up in bed by several pillows, than in the dorsal position. To further control respiration, morphin sulfate in doses of one-sixteenth grain was given at sufficient intervals to keep the rate below 20.

Shortly after admission the patient reacted to the stimulating treatment, his pulse became stronger, and all evidences of threatened collapse disappeared. He rested well the first night and complained of no pain, then or subsequently. The improvement was continuous. The temperature remained normal until the evening of the fifth day, when it rose to 102.2° , and again on the evening of the sixth to 102.3° . This rise was apparently without significance, as the patient at no time seemed disturbed by it. On the eighth day the temperature again reached the norm and has since remained there.

The advisability of thoracic puncture and superficial scarification of the infiltrated tissue to relieve the emphysema was considered; but realizing that such emphysema was not in itself dangerous and that the patient's condition constantly improved under treatment, these procedures were not employed. The wisdom of this decision was demonstrated by the continued absorption of the air and diminution of the emphysema until the ninth day, when it was entirely absent from the tissues. A slight pneumothorax, however, remained. On the ninth day the chest was again carefully examined for evidences of a fracture, but the result of this second examination was again negative; leaving no doubt but that the case was one of rupture without fracture. There developed a slight, dry cough on the fifth day, which, however, soon subsided without any further treatment. The diet was exclusively of milk for a week, when light diet was substituted. The bowels were kept open daily by salines and enemata.

The boy is apparently well now, suffers no inconvenience, and has left the hospital, safe from danger and apparently free from any pulmonary embarrassment. He uses well-developed diaphragmatic breathing which is fully sufficient.

